Curriculum Sequencing - Year 10

Year 10 Term 1a:	
Topics covered:	1.1 Systems architecture 1.2 Memory and storage
How it links to what has been studied before:	Computer Hardware
How it links to what will be studied:	To understand the components that make up digital systems, and how they communicate with one another and with other systems
Key words:	• Architecture CPU • The fetch-execute cycle • ALU (Arithmetic Logic Unit) • CU (Control Unit) • Cache • Registers • Von Neumann architecture: • MAR (Memory Address Register) • MDR (Memory Data Register) • Program Counter • Accumulator • Clock speed • Cache size • Embedded systems • Number of cores • RAM • ROM • Virtual memory • Secondary storage • Optical • Magnetic • Solid state • Capacity • Speed • Portability • Durability • Reliability • Cost
Assessment focus	Quiz 1.0, 2.0, Formal Written Assessment 1 and 2
Revision tips	SmartRevise, Seneca, going over topic homework
Key skills:	Understanding the importance of hardware details and characteristics
Why we study it:	To understand the components that make up digital systems, and how they communicate with one another and with other systems
Mastery in this subject	Demonstrate relevant and comprehensive knowledge and understanding of fundamental concepts and principles including digital systems and societal impacts
Year 10 Term 1b:	
Topics covered:	2.1 Algorithms 2.2 Programming fundamentals

How it links to what has been studied before:	Computation thinking and Python basics
How it links to what will be studied:	To analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs To think creatively, innovatively, analytically, logically and critically
Key words:	• Abstraction • Decomposition • Algorithmic thinking • Pseudocode • Flowcharts • High-level programming language • Errors • Binary search • Linear search • Bubble sort • Merge sort • Insertion sort • Variables • Constants • Operators • Inputs • Outputs • Sequence • Selection • Iteration (count- and condition-controlled loops) • Arithmetic operators • Boolean operators AND, OR and NOT • Integer • Real • Boolean • Character • String • Casting
Key skills:	Applying mathematical skills relevant to Computer Science, Programming skills - design, write, test and refine
Assessment focus	Quiz 3.0, 4.0, Formal Written Assessment 3 and 4
Revision tips	SmartRevise, Seneca, going over topic homework
Why we study it:	To analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs To think creatively, innovatively, analytically, logically and critically
Mastery in this subject	• Effectively apply fundamental concepts, principles and mathematical skills, using sustained analytical, logical and evaluative computational thinking, to a wide range of complex problems • Develop and refine a complete solution that meets the requirements of a substantial problem.